INSTRUCTION MANUAL

Digital Drum Printer

Model DPA12EA

MFE CORPORATION

MFE

KEEWAYDIN DRIVE, SALEM, NEW HAMPSHIRE 03079
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INSTRUCTION MANUAL

Digital Drum Printer

Model DPA12EA

00274001 REV A

MFE CORPORATION

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TECHNICAL DATA

MODELS
DPA6A
DPA12A

DIGITAL TAPE PRINTERS

- PARALLEL ENTRY BCD INPUT
- 6 OR 12 COLUMN MODELS
- 400 MSECS./LINE PRINT RATE
- FLOATING DECIMAL OPTION
- SELECTIVE DUAL OVERPRINTING
- COLUMN SUPPRESSION
- PULSE TRANSFORMER AC LINE ISOLATION
- NEGLIGIBLE RFI
- INTEGRATED CIRCUIT LOGIC
- NO AUDIBLE NOISE IN QUIESCENT STATE
- COMPACT, LIGHTWEIGHT
- OEM PRINTING MECHANISM
- HALF RACK OR FULL RACK VERSIONS
- PORTABLE INSTRUMENT CASE MODELS
- INKLESS PRINTING, 9,000 PRINTS/ROLL
- FAST PAPER ADVANCE
- SIMPLE PAPER LOADING
- COMPREHENSIVE CHARACTER WHEEL LIBRARY
- SPECIAL CHARACTERS, SYMBOLS, OPTIONAL
- UP TO 3 COPIES OF PRINTOUT

1 -1 A 0 3 H A 1 H 1 3 0

2 -2 B 2 * D B -2 D 2 * 2

3 -3 C 1 2 L C -3 L 3 2 1

4 + D 5 -3 F D + F 4 -3 5

5 1 E 6 1 K E 1 K 5 1 6

6 2 F 3 -1 B F 2 B 6 -1 3

7 3 G 9 3 D G 3 D 7 3 9

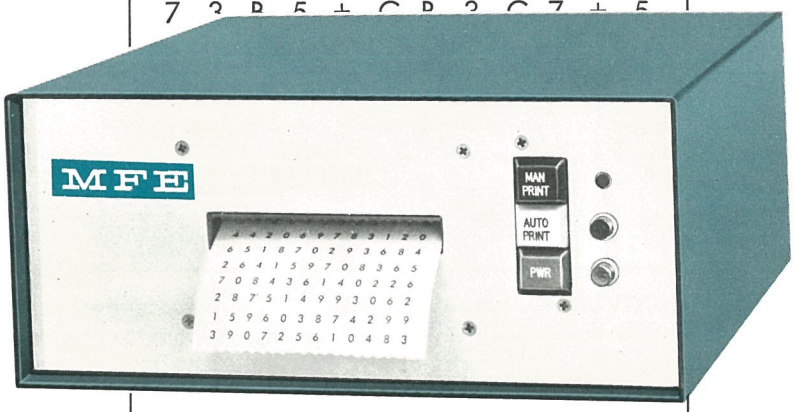
8 * H 7 * J H * J 8 * 7

9 * J 4 1 E J * E 9 1 4

0 - K 1 2 H K - H 0 2 1

3 * L 2 * C L * C 3 * 2

4 * M 8 3 A M * A 4 3 8



1 + H 0 2 K H + K 1 2 0

4 2 E 8 -3 J E 2 J 4 -3 8

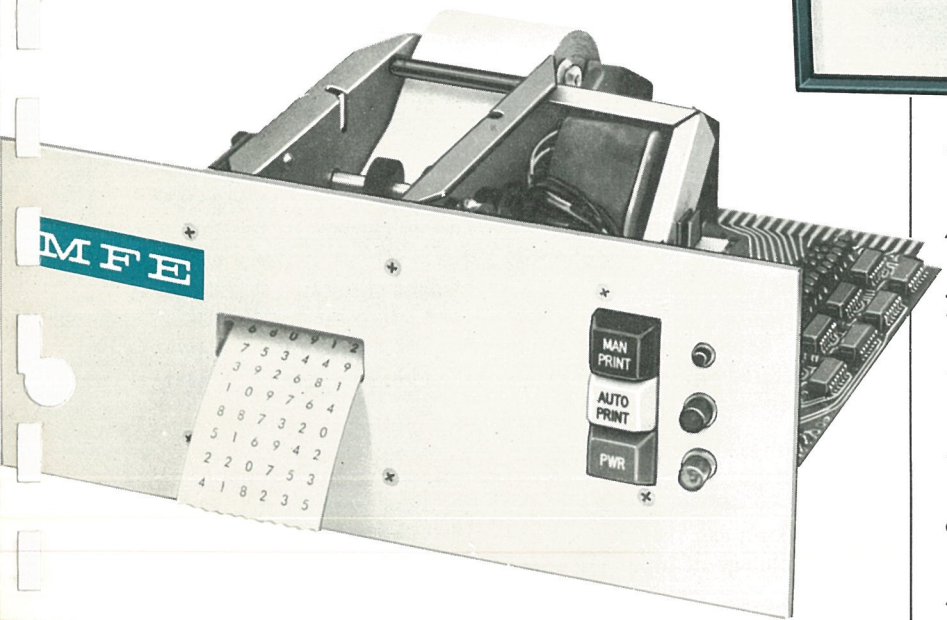
7 1 J 6 * H J 1 H 7 * 6

9 3 D 4 + G D 3 G 9 + 4

3 -1 B 2 -2 F B -1 F 3 -2 2

6 1 K 1 * E K 1 E 6 * 1

5 -3 F 3 -3 D F -3 D 5 -3 3



DESCRIPTION

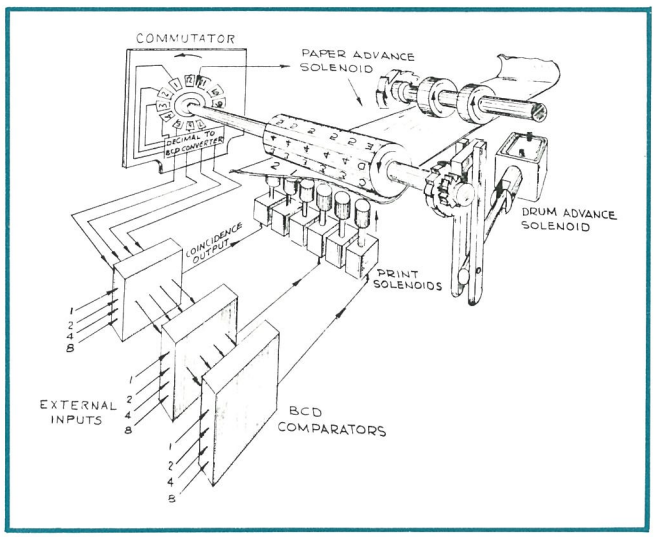
NOVEL DESIGN The Mechanics for Electronics, Inc., digital recorder offers a novel and inexpensive means of converting any binary coded decimal (BCD) voltage information into a permanent, printed form. The entire mechanical and electrical design and special features of the printer have been particularly tailored to interface directly with the new generation of low cost integrated circuit digital panel meters, electronic counters, specialized industrial, nuclear, medical and scientific measuring instruments, data acquisition systems, point-of-sale data terminals, and data processing systems.

SIMPLE INTERFACE The recorder can be supplied as a completely self-contained accessory device requiring only an interconnecting cable to the basic measuring instrument to obtain automatic BCD voltage to decimal conversion and printout. Where the printer is physically incorporated into other instruments it can alternatively be supplied less the optional front panel controls and rear mounted A.C. receptacle and fuse.

CHARACTER DRUM The instrument contains a printing character drum with individual wheels providing parallel columns of various combinations of raised numerals, letters, and symbols around the periphery of the cylindrical surface. Under the drum and in line with each peripheral row of characters are located individual column printing solenoids.

OPERATION Upon receipt of an external print command, the character drum makes one complete revolution and returns to the original home position. During this rotational period all printing is completed on pressure sensitive paper tape with automatic paper advance occurring the instant the drum has returned to its normal home position. Since the drum is normally stationary there is no audible noise from the printer except during the momentary printout periods.

SYSTEM PICTORIAL



HOLD An output data HOLD signal is generated automatically to prevent change of external data while the drum is in motion. The drum also generates a BCD code to identify which one of the twelve possible characters is passing over the respective column print solenoids during rotation of the drum.

BCD INPUTS All groups (columns) of external BCD voltage information to be recorded are compared with the position of the rotating drum through individual column comparison circuits. Printing of any column occurs when the coincidence circuits detect that any character momentarily presented to the printing position during the rotation of the drum is in agreement with (identical to) the external information presented to a particular printer column.

UNIVERSAL LOGIC BOARD The optional logic board contains a regulated power supply, power on delay circuits with automatic reset of all logic, various control circuits, column comparator circuits, and pulse transformer isolated SCR solenoid drivers. Provisions have been further incorporated in the universal model for installation of any additional components required to provide 12 columns of non-standard logic voltage conditioning and floating decimal capabilities.

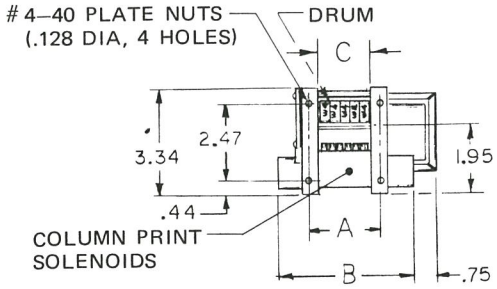
OVERPRINTING Floating decimal requires one discrete line per column specified. Grounding of any one or more of these input lines will cause printout of the decimal in the appropriate column(s). A special character wheel with offset decimal is utilized so that the decimal will imprint to the left of the digital number that is also printed as a result of the normal column BCD input information. Both the data character(s) and the selected decimal point are printed during one revolution of the drum. Selective dual overprinting utilizing drum positions 11 and 12 operates in the same way as floating decimal. Printout of + or −, AM or PM, . or : can be obtained without increasing the number of active columns. Up to one line of overprint per active column is offered on the 12 column model and 8 lines of overprint on the 6 column model.

PRINT The printing period is determined by the time required to present all characters of the drum to the print position. Since the drum makes one complete revolution in 400 milliseconds; the maximum printing rate is 2½ lines/sec. An effective system printing rate of 2 lines per second can therefore be achieved (as an example) with 100 millisecond allowance for a new external measurement and change of input information to the printer.

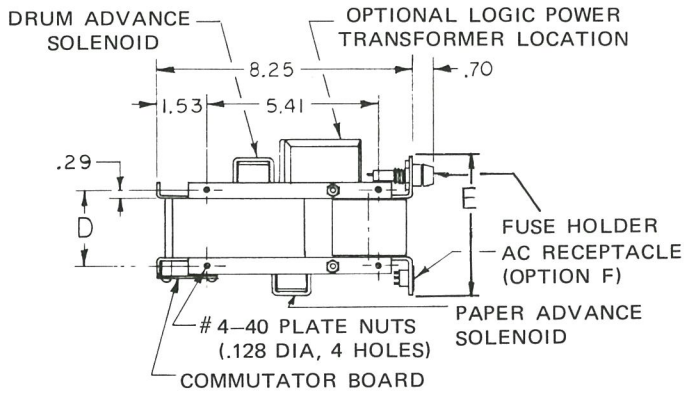
INSTALLATION

MODELS DPA6MA AND DPA12MA – OEM PRINTING MECHANISM

UNIT	A	B	C	D	E
DPA6MA	2.470	4.375	1.77	2.344	4.520
DPA12MA	4.120	6.000	3.42	3.994	6.250

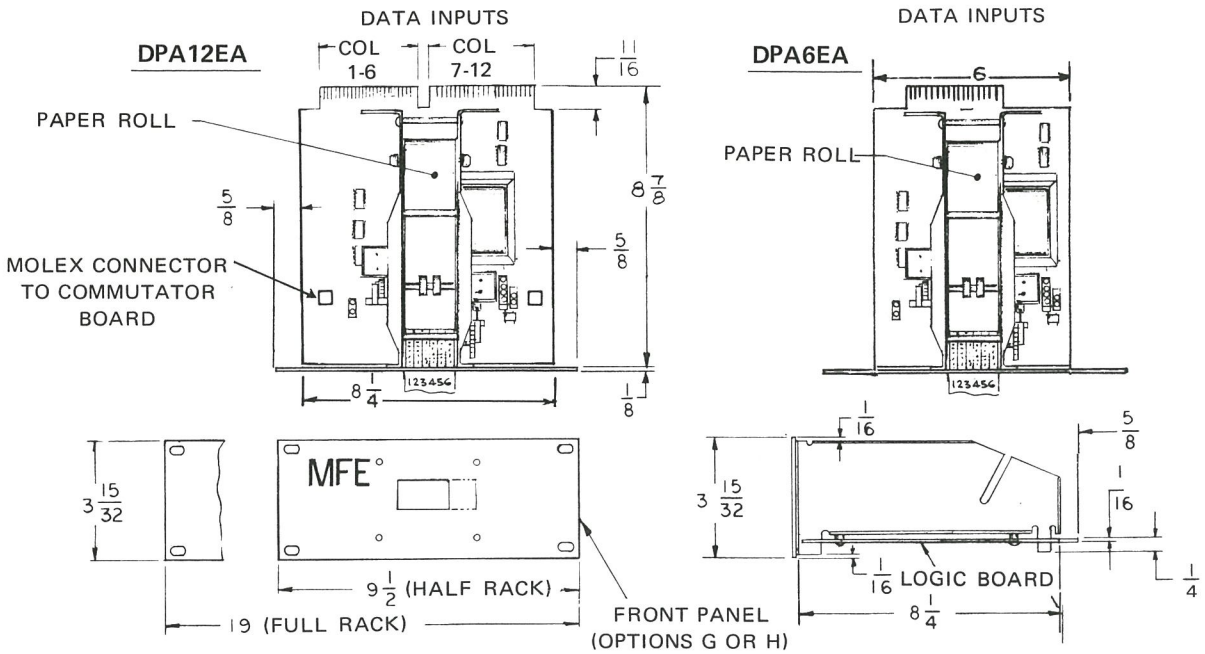


FRONT VIEW



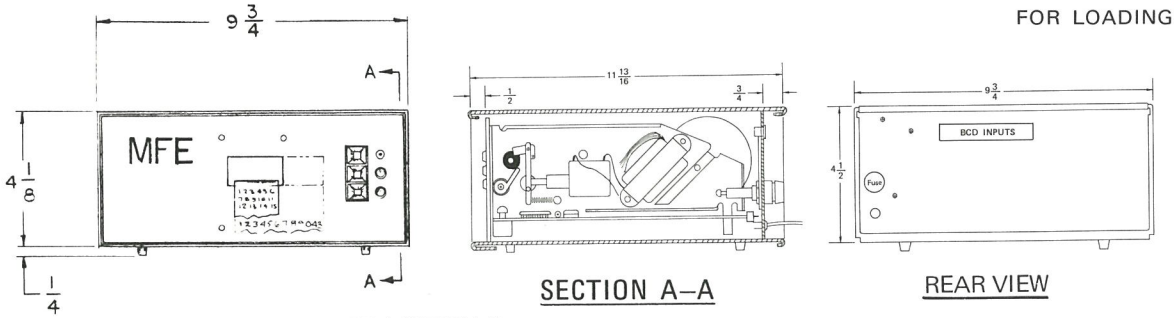
BOTTOM VIEW

MODELS DPA6EA AND DPA12EA – MECHANICAL UNIT WITH INTERFACE ELECTRONICS



OPTION J – PORTABLE INSTRUMENT CASE

SPRING OPERATED FLIP OPEN TOP FOR LOADING PAPER.



INSTRUMENT CASE VERSION (OPTION J)
SUPPLIED ONLY WITH OPTION F

SPECIFICATIONS

NUMERICAL DATA INPUT 1 - 2 - 4 - 8 BCD

LOGIC LEVELS Positive true logic standard. "1" state > 2.4 and < 5.5 volts, source Z less than 40 K Ω. "0" state < 0.8 volts, source Z less than 200Ω.

PRINT COMMAND Change from logic "0" state to logic "1" state (STD). 10 microsecond minimum duration capacity coupled. 100 nanoseconds minimum direct coupled.

PRINT RATE 400 msecs/line at maximum rate.

TEMPERATURE RANGE AND DUTY CYCLE Continuous duty 100% at 0°C to + 50°C for 1 line/second print rate. intermittent duty 25% (150 consecutive lines mas.) at +20°C for 2.5 lines/second max. print rate.

DATA HOLD SIGNAL Changes from "1" state to "0" state (STD). upon receipt of print command. Automatic return to "1" state upon completion of print cycle. Printer output Z less than 1000Ω for logic 1, less than 200Ω for logic 0 with 5 ma. max. current.

COLUMN SUPPRESSION Positive true model – all inputs high; Negative true model – ground all four inputs.

OVERPRINTING 12 lines of overprinting on model DPA12EA and 8 lines of overprinting on model DPA6EA. Change from logic "1" state to logic "0" state (STD). Available for wheel positions 11 and 12 only.

CHARACTERS Standard: .110 high x .100 wide, .010 face. Gorton Condensed: .110 high x .065 wide x .010 face.

EXTRA PAPER ADVANCE Advances paper tape one line per print command while 0 volts or switch closure applied to print inhibit terminal at rear of printer. (useful to space groups of data.)

FAST PAPER ADVANCE Grounding of appropriate rear terminal causes paper to advance at 30 lines/second rate. Front panel push button switch supplied with Option F.

COLUMNS AND LINE SPACING DPA6A 1 to 6 columns, DPA12A 1 to 12 columns. .175 inches between column centers, 5 lines per inch.

PAPER TAPE DPA6A 1-23/32 wide, DPA12A 3-3/8 wide. Pressure sensitive paper 150 foot length with approximately 9000 prints per roll.

WEIGHT DPA6A 3.75 lbs., DPA12A 4.50 lbs. (half rack mount with Option F). Instrument case 5 lbs.

POWER 117 volts ±10%, 60 Hz. 117 or 230 volts ±10%, 50 Hz. (Specify). 10 watts quiescent, 70 watts during print cycle (DPA12EA / 10)

OPTIONS

OPTION A Negative true data input. "0" state > 2.4 and < 5.5 volts. "1" state < 0.8 volts.

OPTION B Special voltage logic in ranges 0 to 0.4 volts and 1.0 to 28 volts or -1.0 to -28 volts.

OPTION C Overprinting. Single line input per overprint required. Presence of "0" state (STD).

OPTION F Push button interlocked switch bank, pilot lights, rear mounted 3 pront A.C. receptacle and fuse holder.

MISCELLANEOUS OPTIONS Special characters and symbols; special wheels; interconnecting harness between printer and selected commercial instruments; instrument case; print command initiated sequence number accumulator with printout – useful for sequential identification of samples in a test. See current price sheet for list of standard options.

WHEEL LIBRARY

	WHEEL OPTIONS	DRUM POSITION AND INPUT LOGIC CODE											
		1	2	3	4	5	6	7	8	9	10	11	12
		0001	0010	0011	0100	0101	0110	0111	1000	1001	0000	1010	1100
	A	1	2	3	4	5	6	7	8	9	0	A	P
	B	.1	.2	.3	.4	.5	.6	.7	.8	.9	.0	SP	SP
(1)	C	–1	–2	–3	+	+1	+2	+3	*	*	–	*	*
	D	A	B	C	D	E	F	G	H	J	K	L	M
	E	N	P	Q	R	S	T	U	V	W	X	Y	Z
	F	1	2	3	4	5	6	7	8	9	10	11	12
(3)	G1	1	2	3	4	5	6	7	8	9	0	.	:
(2)	G	1	2	3	4	5	6	7	8	9	0	.	:
	H	:1	:2	:3	:4	:5	:6	:7	:8	:9	:0	SP	SP
(3)	J	1	2	3	4	5	6	7	8	9	0	–	+
	K	AC	DC	mA	mV	Hz	Ω	KΩ	°C	°F	kg	lb	MΩ
(4)	L	1	2	3	4	5	6	7	8	9	0	A	P

(1) Special DVM wheel with asterisk for over-range.
(2) Supplied for columns ordered with Option C. Numerals offset to right, decimal offset to left.
(3) Gorton condensed numerals offset to right, characters on positions 11 and 12 offset to left.
(4) Gorton condensed numerals offset to left, characters on positions 11 and 12 offset to right.
(5) Solid Pad, Square

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TECHNICAL DATA

MODEL DPC11EA
MODEL DPC11MA

DIGITAL TICKET PRINTERS

- PRINTOUT ON MULTIPLE COPY TICKET OF TAB CARD SIZE
- INDEXING OF 20 CONSECUTIVE LINES
- PARALLEL ENTRY BCD INPUT
- 11 ACTIVE COLUMNS
- 400 MSECS/LINE PRINT RATE
- FLOATING DECIMAL OPTION IN UP TO 11 COLUMNS
- SELECTIVE DUAL OVERPRINTING
- COLUMN SUPPRESSION
- NEGLIGIBLE RFI
- INTEGRATED CIRCUIT LOGIC
- NO AUDIBLE NOISE IN QUIESCENT STATE
- COMPACT, LIGHTWEIGHT
- PRINTING MECHANISM AVAILABLE TO THE OEM
- PANEL MOUNTED OR INSTRUMENT CASE VERSIONS
- 30 LINES/SEC FAST TICKET EJECTION
- COMPREHENSIVE CHARACTER WHEEL LIBRARY
- SPECIAL CHARACTERS, SYMBOLS, OPTIONAL
- UP TO 5 COPIES OF PRINTOUT

TICKET DESCRIPTION:

- One top copy on pressure sensitive paper
- One carbon paper overleaf
- Second copy on standard bond paper
- One carbon paper overleaf
- Third copy on TAB card

The MFE Model DPC11EA Digital Drum Ticket Printer is conceived to meet the increasing requirement for a ticket printer designed to print on a TAB card, and also on 2, 3, or 4 more copies for the purpose of keeping additional records of the transaction. The MFE Ticket Printer offers the following printing sequence:

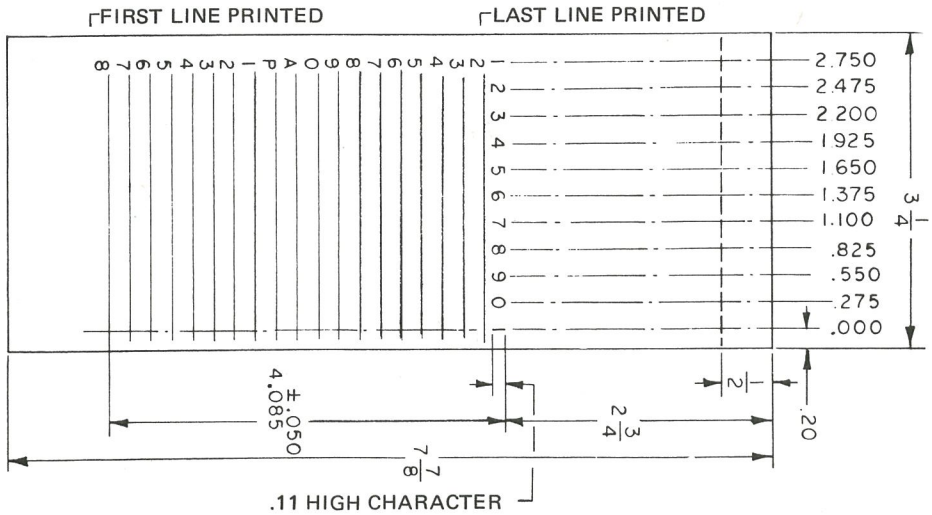
a. Insert ticket freely.
b. Actuate microswitch located in center of printer near the stop on back for "printer stand-by signal".
c. Simultaneous with b, switch closure energizes solenoid which actuates rollers to secure ticket.
d. Print up to 20 consecutive lines.
e. Release solenoid by action of microswitch located beneath rollers.

Model DPC11MA is the printing mechanism of the Digital Ticket Printer available as an O.E.M. item.

SPECIFICATIONS:

NUMERICAL DATA INPUT	1 - 2 - 4 - 8 BCD
LOGIC LEVELS	Positive true logic standard. "1" state >2.4 and <5.5 volts, source Z less than 40 KΩ. "0" state <.8 volts, source Z less than 200Ω.
PRINT COMMAND	Change from logic "0" state to logic "1" state (STD). 10 microsecond minimum duration capacity coupled. 100 nanoseconds minimum direct coupled.
PRINT RATE	400 msecs/line at maximum rate.
TEMPERATURE RANGE AND DUTY CYCLE	Continuous duty 100% at 0°C to +50°C for 1 line/second print rate. Intermittent duty 25% (150 consecutive lines max.) at +20°C for 2.5 lines/second max. print rate.
DATA HOLD SIGNAL	Changes from "1" state to "0" state (STD) upon receipt of print command. Automatic return to "1" state upon completion of print cycle. Printer output Z less than 1000Ω for logic 1, less than 200Ω for logic 0 with 5 ma. max. current.
COLUMN SUPPRESSION	Positive true model — all inputs high; Negative true model — ground all four inputs.
OVERPRINTING	12 lines of overprinting on Model DPC11EA. Change from logic "1" state to logic "0" state (STD). Available on wheel positions 11 and 12 only.
CHARACTERS	Standard: .110 high x .100 wide x .010 face. Gorton Condensed: .110 high x .065 wide x .010 face.
EXTRA TICKET ADVANCE	Advances ticket one line per print command while 0 volts or switch closure applied to print inhibit terminal at rear of printer. (Useful to space groups of data.)
FAST TICKET ADVANCE	Grounding of appropriate rear terminal causes ticket to advance at 30 lines/second rate. Front panel push button switch supplied with Option F.
COLUMNS AND LINE SPACING	Per MFE ticket outline drawing on this data sheet.
STANDARD TICKET SPECIFICATIONS	Refer to outline drawing on this data sheet.
WEIGHT	DPC11EA 4.50 lbs. (half rack mount with Option F). Instrument case 5 lbs.
POWER	115VAC ±10%, 60 Hz. 220VAC and 50 Hz. optional. 10 watts quiescent, 70 watts during print cycle (with 10 active columns).

STANDARD MFE TICKET



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PAPER TAPE LOADING INSTRUCTIONS

A. Cut paper tape diagonally to insure smooth starting edge.

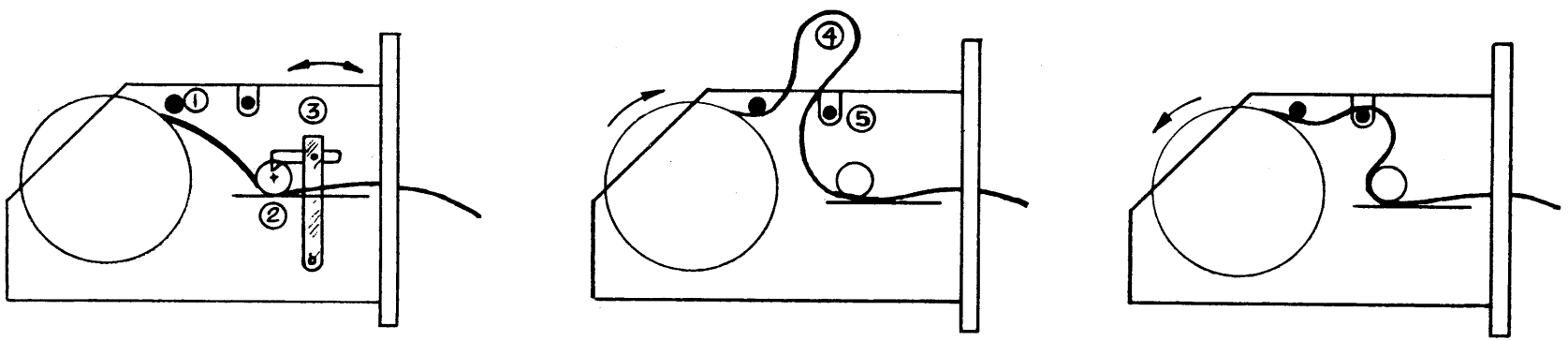
B. Feed paper tape under sideplate spacer rod (1) and along guide plate until paper maintains contact with feed wheel (2).

C. Manually actuate paper feed pawl arm (3) until paper feeds out of the front panel.

D. Feed additional paper by manually rotating paper tape roll until excessive loop of paper (4) is above top of printer.

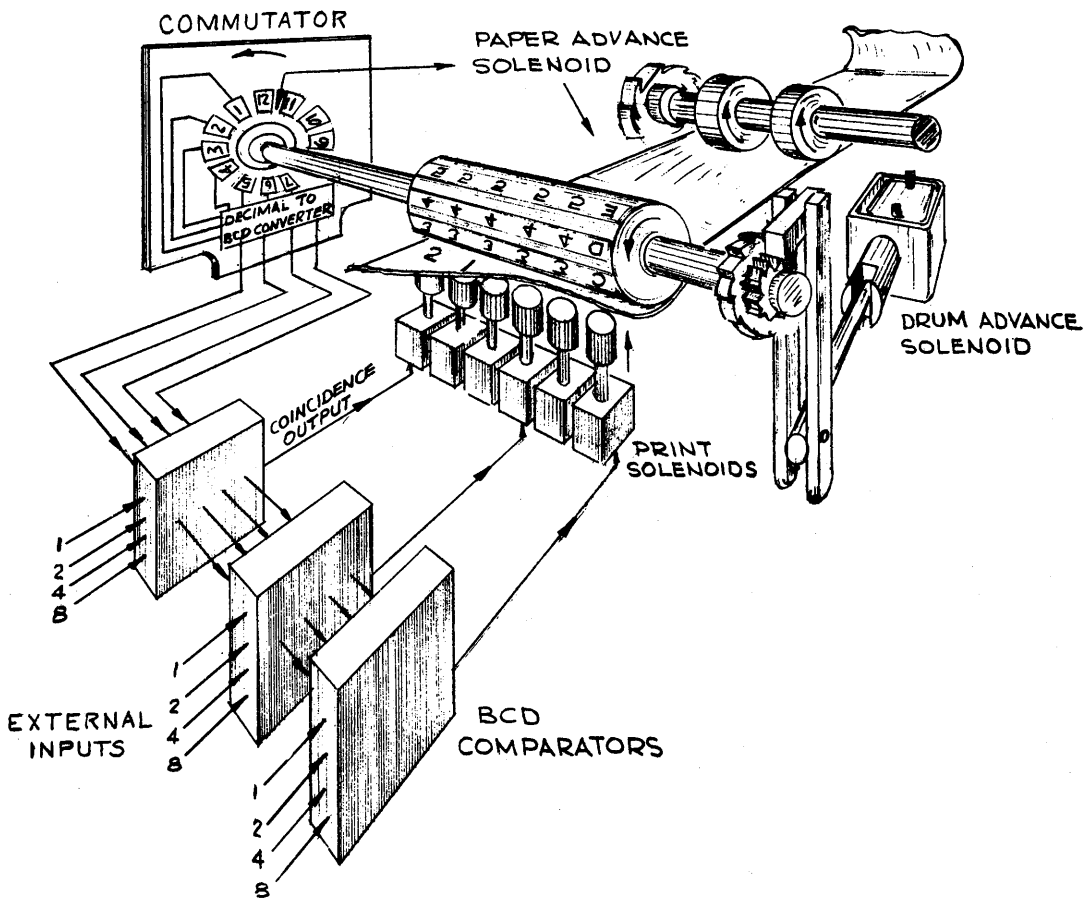
E. Remove paper guide roller (5)(swivel two retaining clips outboard) and re-install beneath loop of paper.

F. Re-wind paper tape roll until excessive slack (loop) is minimized.

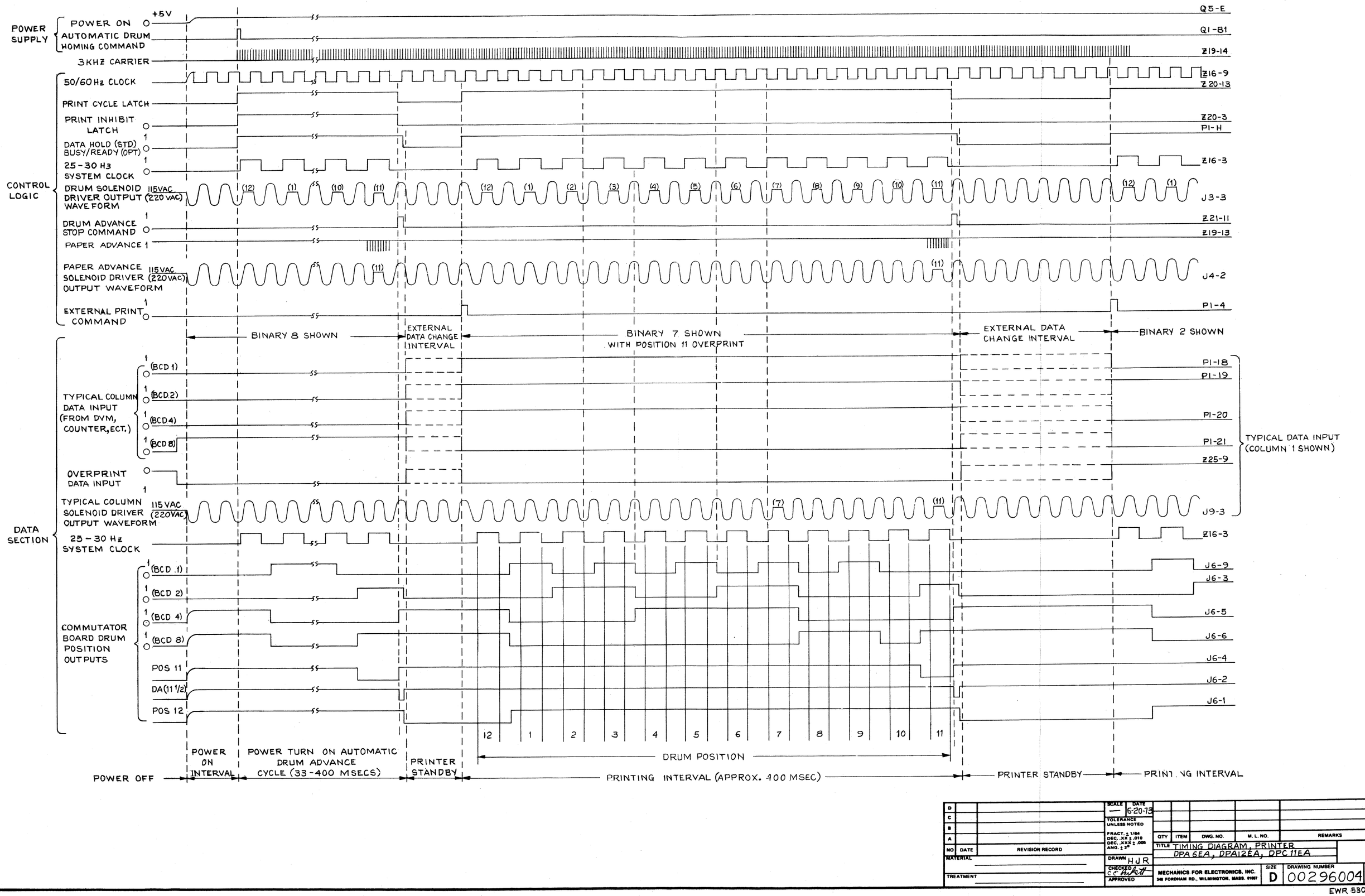


DRAWING NO. 00291005

PRINTING TECHNIQUE OF THE MFE DIGITAL PRINTER



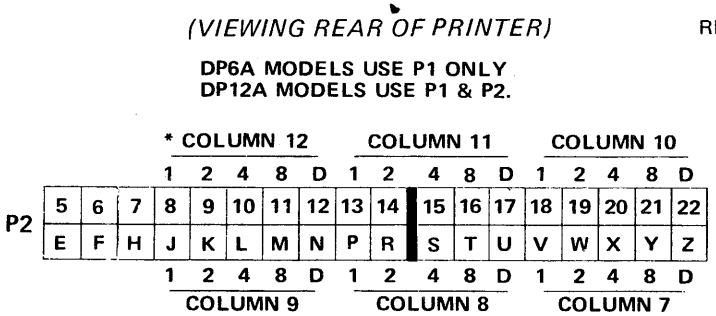
DRAWING NO. 00292003

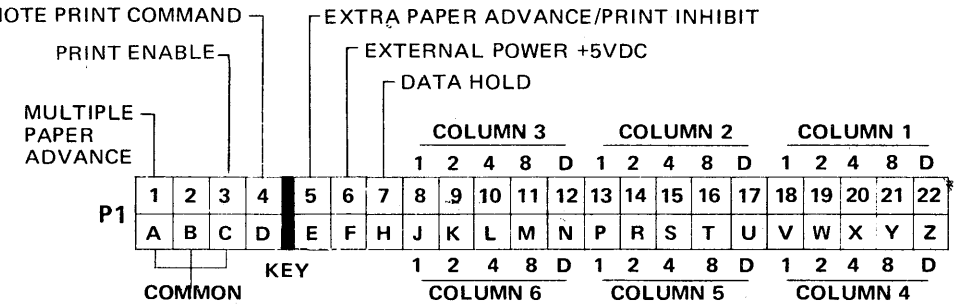

POWER SUPPLY
+5V
POWER ON
AUTOMATIC DRUM HOMING COMMAND
3KHZ CARRIER
CONTROL LOGIC
50/60 Hz CLOCK
PRINT CYCLE LATCH
PRINT INHIBIT LATCH
DATA HOLD (STD) BUSY/READY (OPT)
25-30 H3 SYSTEM CLOCK
DRUM SOLENOID DRIVER OUTPUT WAVE FORM
115VAC (220 VAC)
DRUM ADVANCE STOP COMMAND
PAPER ADVANCE
PAPER ADVANCE SOLENOID DRIVER OUTPUT WAVEFORM
115VAC (220VAC)
EXTERNAL PRINT COMMAND
Q5-E
Q1-B1
Z19-14
Z16-9
Z20-13
Z20-3
P1-H
Z16-3
J3-3
Z21-11
Z19-13
J4-2
P1-4
BINARY 8 SHOWN
EXTERNAL DATA CHANGE INTERVAL
BINARY 7 SHOWN WITH POSITION 11 OVERPRINT
EXTERNAL DATA CHANGE INTERVAL
BINARY 2 SHOWN
DATA SECTION
TYPICAL COLUMN DATA INPUT (FROM DVM, COUNTER, ECT.)
(BCD 1)
(BCD 2)
(BCD 4)
(BCD 8)
OVERPRINT DATA INPUT
TYPICAL COLUMN SOLENOID DRIVER OUTPUT WAVEFORM
115 VAC (220VAC)
25-30 Hz SYSTEM CLOCK
COMMUTATOR BOARD DRUM POSITION OUTPUTS
(BCD 1)
(BCD 2)
(BCD 4)
(BCD 8)
POS 11
DA(11 1/2)
POS 12
P1-18
P1-19
P1-20
P1-21
Z25-9
J9-3
Z16-3
J6-9
J6-3
J6-5
J6-6
J6-4
J6-2
J6-1
TYPICAL DATA INPUT (COLUMN 1 SHOWN)
12 1 2 3 4 5 6 7 8 9 10 11
DRUM POSITION
POWER OFF
POWER ON INTERVAL
POWER TURN ON AUTOMATIC DRUM ADVANCE CYCLE (33-400 MSECS)
PRINTER STANDBY
PRINTING INTERVAL (APPROX. 400 MSEC)
PRINTER STANDBY
PRINTING INTERVAL

| | | |

(VIEWING REAR OF PRINTER)

DP6A MODELS USE P1 ONLY
DP12A MODELS USE P1 & P2.




REMOTE PRINT COMMAND
PRINT ENABLE
MULTIPLE PAPER ADVANCE
EXTRA PAPER ADVANCE/PRINT INHIBIT
EXTERNAL POWER +5VDC
DATA HOLD
COLUMN 3
COLUMN 2
COLUMN 1
1 2 4 8 D 1 2 4 8 D 1 2 4 8 D
P1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F H J K L M N P R S T U V W X Y Z
KEY
COMMON
1 2 4 8 D 1 2 4 8 D 1 2 4 8 D
COLUMN 6
COLUMN 5
COLUMN 4

"D" IS OPTIONAL OVERPRINT INPUT.

PI–1. **MULTIPLE PAPER ADVANCE.** When connected to pin A, paper advances @ 30 HZ rate (fig. B). Front panel momentary push button fast paper advance switch furnished with option F.

PI–3. **PRINT ENABLE.** This point must be connected to common for any print cycle to occur. Permits choice of front panel or remote control enable. No connection required with option F since connections made through MANUAL or AUTO mode switch. Upon grounding of this point a print cycle will be initiated. In lieu of logic signal at PI–4 (remote print command), a print cycle will be initiated with momentary closure to Pin B (fig. C).

PI–4. **REMOTE PRINT COMMAND.** Normal input point for initiation of print cycle. On standard printer this is normally a positive going pulse as defined by the bulletin specifications and is generally supplied by the interfacing equipment (counter, DVM, etc.). To manually initiate print during absence of remote print command lines, the circuit in figure A must be utilized. Manual initiation of print should not be utilized during period of changing data unless automatic hold circuit is properly utilized.

PI–5. **EXTRA PAPER ADVANCE/PRINT INHIBIT.** When this point shorted to pin C, each print command received at pin PI–4 will cause drum to cycle one revolution and paper to advance one line without printout.

PI–6. **EXTERNAL POWER.** +5 Volts DC @ 50 ma available. If more than 50 ma is required consult factory.

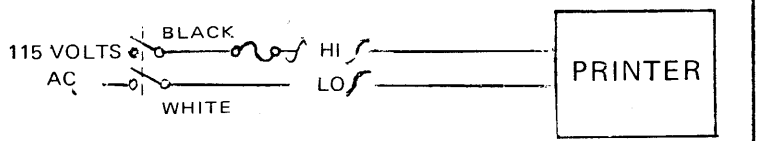
PI–7. **DATA HOLD.** This signal may be utilized to prevent external input data from changing during the 400 msec print cycle.

PI–ABC **COMMON.** Signal return (0 volts DC).

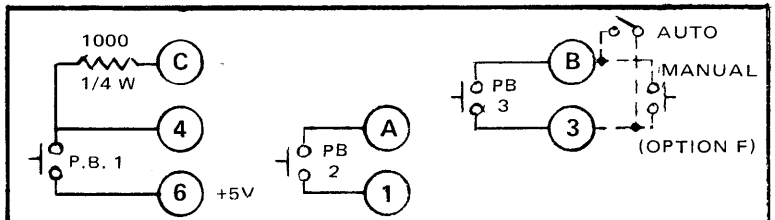
PRINTER SELF TEST: On standard printer, tying pins 8, 9, & 10 of P1 to common pin C will cause an 8 to be printed in column 3. On optional negative true printers, tying of pin 11 to pin C will cause printout of the same numeral 8. Any of the column input groups may be similarly wired for any desired number printout.

COLUMN SUPPRESSION: Positive true model – all inputs high; Negative true model – ground all four inputs. **BCD 14** SHOULD NOT BE USED.

PI–DEF **TICKET LATCHED FEEDBACK SIGNAL** – For DPC11EA Ticket Printer only. D is common, E is a normally open contact and F is a normally closed contact. See Schematic No. 00189027.



ALWAYS FUSE SEE FUSE CHART BELOW
A.C. INPUT PROVIDED IN ABSENCE OF OPTION F



FUSE CHART
ACTIVE FUNCTIONS*

1 to 8	1 AMP 3 AG Fast blow
9 to 13	2 AMP 3 AG Fast blow
14 & over	3 AMP 3 AG Fast blow

* **ACTIVE FUNCTIONS** – Active Column or Overprint Column

* Model DPC11EA has no Column 12.

TITLE	DPA6EA, DPA12EA, or DPC11EA UNIVERSAL LOGIC BOARD CONNECTIONS	
MFE CORPORATION SALEM, NEW HAMPSHIRE 03079	SIZE A	DRAWING NUMBER 00293001

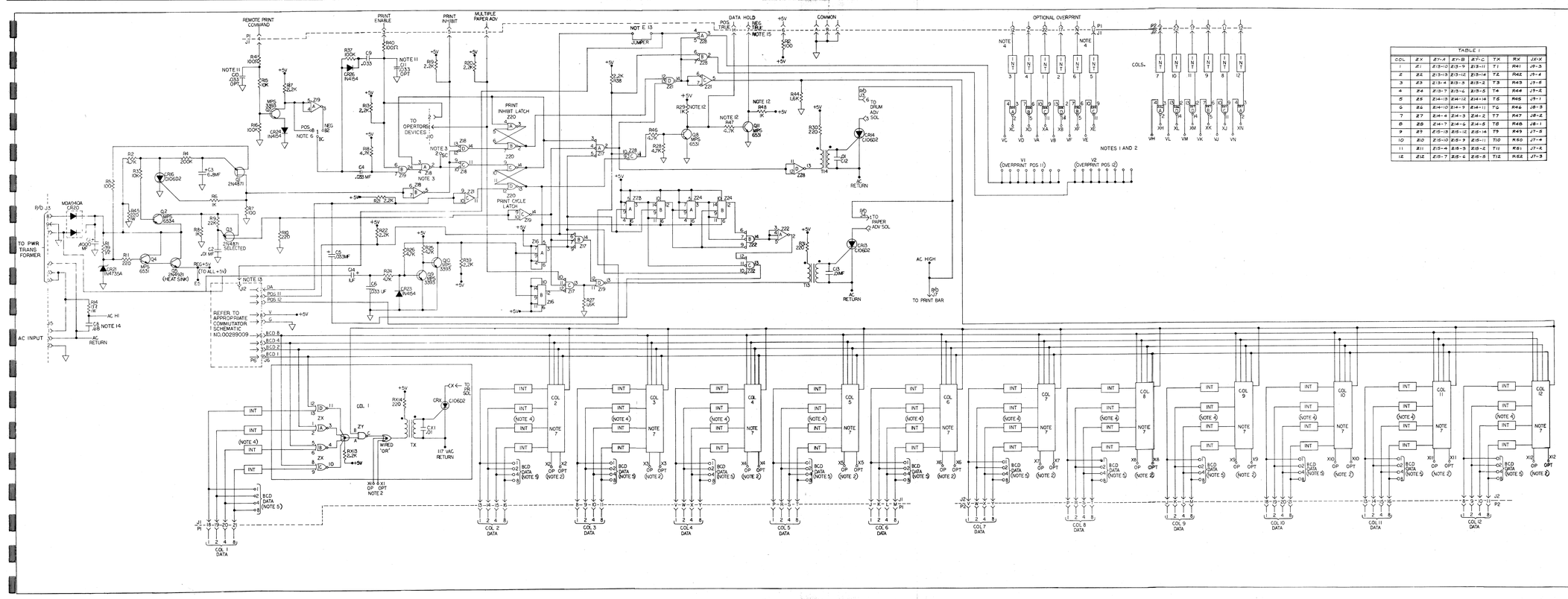


TABLE 1							
COL	ZX	ZY-A	ZY-B	ZY-C	TX	RX	JX-X
1	Z1	Z13-10	Z13-9	Z13-11	T1	R41	J9-3
2	Z2	Z13-3	Z13-12	Z13-14	T2	R42	J9-4
3	Z3	Z13-4	Z13-3	Z13-12	T3	R43	J9-6
4	Z4	Z13-7	Z13-4	Z13-3	T4	R44	J9-2
5	Z5	Z14-13	Z14-12	Z14-14	T5	R45	J9-1
6	Z6	Z14-10	Z14-9	Z14-11	T6	R46	J8-3
7	Z7	Z14-4	Z14-3	Z14-2	T7	R47	J8-2
8	Z8	Z14-7	Z14-6	Z14-5	T8	R48	J8-1
9	Z9	Z15-13	Z15-12	Z15-14	T9	R49	J7-5
10	Z10	Z15-10	Z15-9	Z15-11	T10	R50	J7-4
11	Z11	Z15-4	Z15-3	Z15-2	T11	R51	J7-2
12	Z12	Z15-7	Z15-6	Z15-5	T12	R52	J7-3

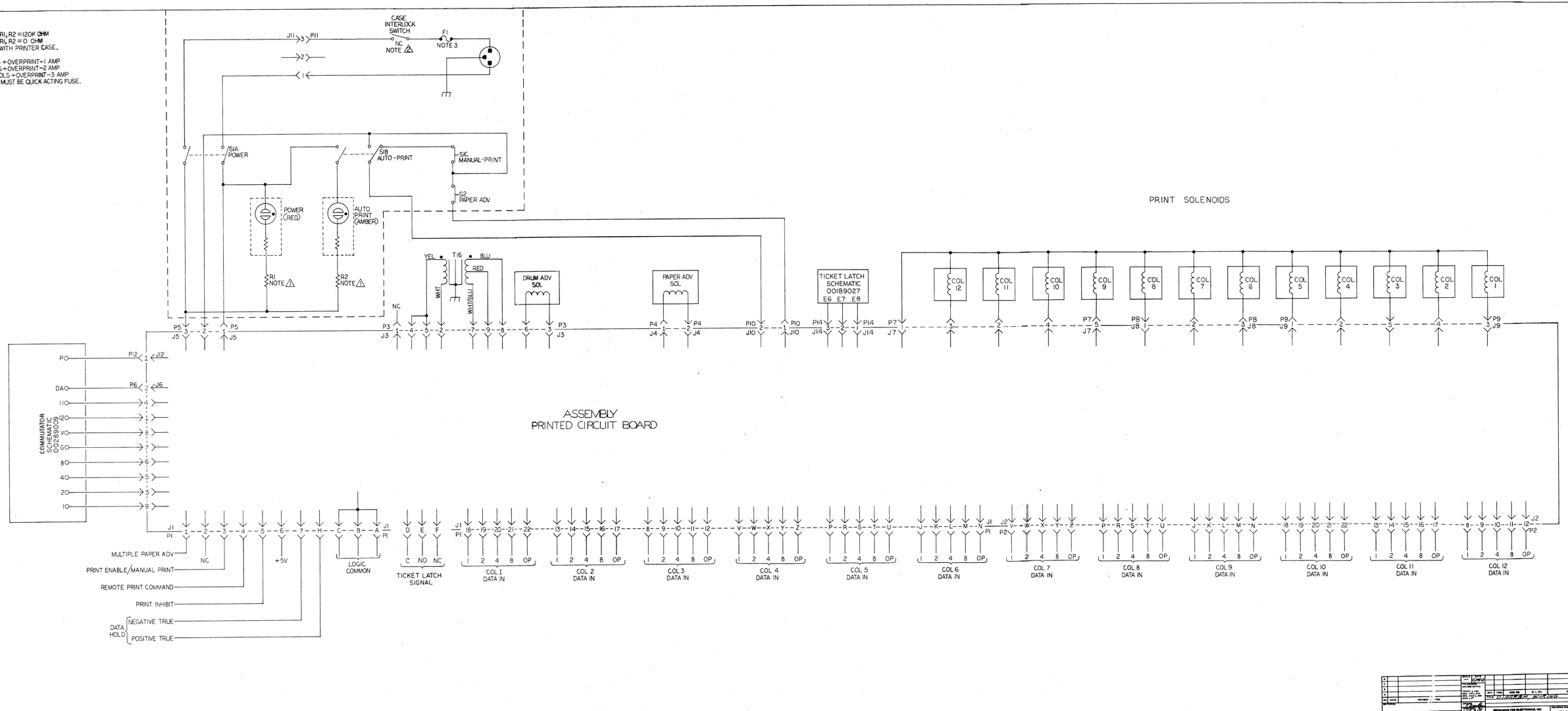
NOTES:
1. OVERPRINT TIMING INPUTS VA THRU VH SHOULD BE JUMPERED TO V1 (POS 11) OR V2 (POS 12) TO OBTAIN CUSTOMER SPECIFIED OVERPRINTS. REFER TO "OVERPRINT CIRCUITS" TABLE ON ASSEMBLY DRAWING NO. 1083200
2. OVERPRINT COLUMN INPUTS X1 THRU X12 SHOULD BE JUMPERED TO XA THRU XN TO OBTAIN CUSTOMER SPECIFIED OVERPRINTS. REFER TO "COLUMN ELECTRONICS" TABLE ON ASSEMBLY DRAWING NO. 1083200
3. PRINT CYCLE PULSE OUTPUT TO OPTIONAL SEQUENCE COUNTER.
4. INSTALL COMPONENTS AND JUMPERS TO OBTAIN CUSTOMER SPECIFIED OPTIONS.
5. BCD DATA INPUTS FROM OPTIONAL SEQUENCE COUNTER ARE CONNECTED TO UNUSED PADS OF INPUT CONDITIONING CIRCUITS.
6. INSTALL JUMPER TO OBTAIN CUSTOMER SPECIFIED POSITIVE OR NEGATIVE TRUE REMOTE PRINT COMMAND.
7. REFER TO COLUMN ELECTRONICS FOR CIRCUIT DETAILS. TABLE 1 BELOW, KEYS COMPONENT REFERENCE DESIGNATIONS TO THE PARTICULAR COLUMNS AND THE ASSEMBLY DRAWING.
8. REFER TO ASSEMBLY DRAWING NO. 1083200 FOR ACTUAL COMPONENT LOCATIONS.
9. REFER TO TABLE 2 BELOW FOR INTEGRATED CIRCUIT TYPE NUMBERS OF Z1 THRU Z28.
10. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W 15%.
11. EXTRA NOISE SUPPRESSION : OPTIONAL.
12. WHEN OPEN COLLECTOR DATA HOLD IS DESIRED, REMOVE JUMPER AND USE U2-6 FOR MOS TRUE. REMOVE R28 AND R47
13. REMOVE JUMPER AND USE U2-1 WITH REVERSE COMMUTATOR.
14. C8 IS 1.5UF FOR 220 VAC OPERATION.
15. THIS OUTPUT TO USED FOR LATCHING INPUT ONLY. IF BUSY/READY SIGNAL IS DESIRED SEE OPTIONAL FUNCTION SCHEMATIC

TABLE 2					
Z1	N8242A	Z16	N8242A	Z23	SP321A
Z2	"	Z17	SP 387A	Z24	SP321A
Z3	"	Z18	"	Z25	SP387A
Z4	"	Z19	"	Z26	SP387A
Z5	"	Z20	SP321A	Z27	SP387A
Z6	"	Z21	SP387A	Z28	SP350A
Z7	"	Z18	SP387A		
Z8	"	Z15	SP350A		
Z9	"	Z20	SP350A		
Z10	"	Z21	SP387A		
Z11	"	Z22	SP370A		

INTERFACE OPTIONS NOTE 4

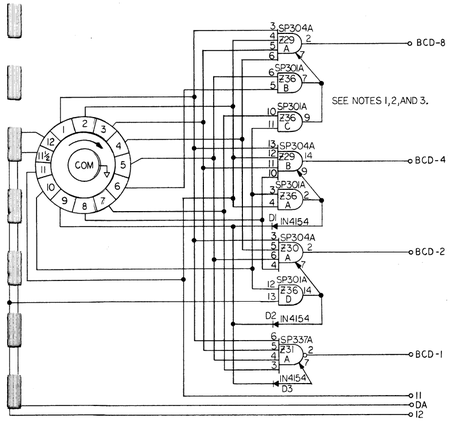
1. TTL/DTL (0, +5V) — JUMPER ONLY
2. NON-STANDARD LEVEL LOGIC (0, +5.8V) (1, +12V) (1, +15V) — 10K, RX09 RXD2, MPS 3393, QX01-QX04
3. CONTACT CLOSURE — 10K, 5V, IN4154, IN4154, 100K, MPS 3393, QX03-QX04, +5V, RX05-RX08 10K
4. NEGATIVE VOLTAGE LOGIC (0, -12V) (0, -5V) (0V, +12V) — RX09-RX002, 10K, IN4154 CRX01-CRX04, MPS 3393, QX01-QX04

NOTES:
1. FOR 220V – R1, R2 = 120K OHM
   FOR 110V – R1, R2 = 0 OHM
2. USED ONLY WITH PRINTER CASE.
3. WHEN :
   1–8 COLS + OVERPRINT – 1 AMP
   9–12 COLS + OVERPRINT – 2 AMP
   13 + UP COLS + OVERPRINT – 3 AMP
   "WARNING", MUST BE QUICK ACTING FUSE.



NO.	DATE	REVISED — 1960					

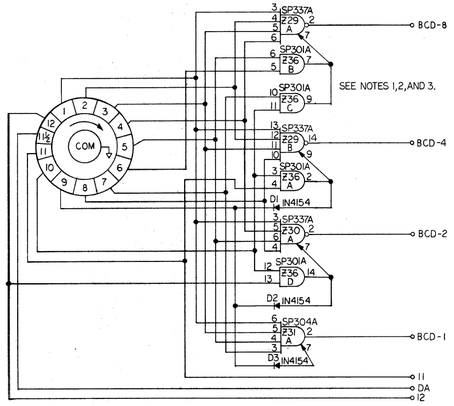
SCALE: NONE
DRAWN: [illegible]
TRACED:
DESIGNED:
CHECKED: [illegible]
APPROVED: [illegible]
DATE: SEPT 1964
MFR. NO.
TITLE: HARNESS, WIRING
MECHANICS FOR ELECTRONICS, INC.
DRAWING NUMBER: #00288001
REV: THIOF1
ENR2825



NORMAL COMMUTATOR, POSITIVE TRUE OUTPUT
ASSY NO. 10521003

BCD OUTPUT POS TRUE				NORMAL COMMUTATOR WIPER POSITION	CHARACTER WHEEL POSITION
1	2	4	8		
1	0	0	0	1	1
0	1	0	0	2	2
1	1	0	0	3	3
0	0	1	0	4	4
1	0	1	0	5	5
0	1	1	0	6	6
1	1	1	0	7	7
0	0	0	1	8	8
1	0	0	1	9	9
0	0	0	0	10	10
0	1	0	1	11	11
0	1	1	1	11½	—
0	0	1	1	12	12

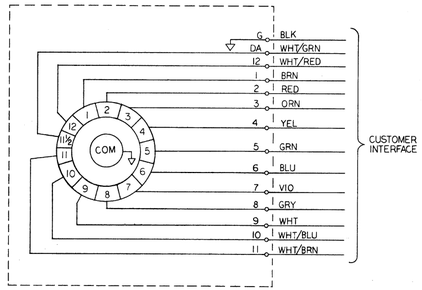
SEE NOTE 4



NORMAL COMMUTATOR, NEGATIVE TRUE OUTPUT
ASSY NO. 10522001

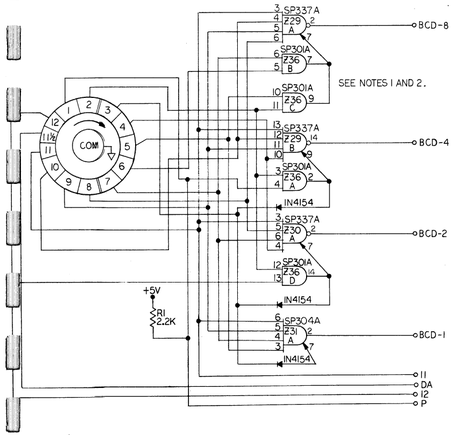
BCD OUTPUT NEG TRUE				NORMAL COMMUTATOR WIPER POSITION	CHARACTER WHEEL POSITION
1	2	4	8		
0	1	1	1	1	1
1	0	1	1	2	2
0	0	1	1	3	3
1	1	0	1	4	4
0	1	0	1	5	5
1	0	0	1	6	6
0	0	0	1	7	7
1	1	1	0	8	8
0	1	1	0	9	9
1	1	1	1	10	10
1	0	1	0	11	11
1	0	0	0	11½	—
1	1	0	0	12	12

SEE NOTE 5



MECHANICAL COMMUTATOR
ASSY NO. 10523009

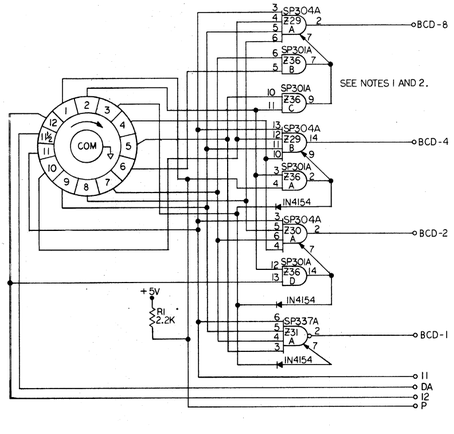
NOTES:
1. CONNECT +5V TO PIN 8 OF Z29, Z30, Z31 ONLY.
2. CONNECT GND TO PIN 1 OF ALL IC'S.
3. ABSENCE OF INPUT TO THE IC DECODES (i.e., CONTACT BOUNCE) AS BCD "14".
4. RED CONNECTOR IS POS. TRUE.
5. WHITE CONNECTOR IS NEG. TRUE.



REVERSE COMMUTATOR, NEGATIVE TRUE OUTPUT
ASSY. NO. 10521037

BCD OUTPUT NEG TRUE				REVERSE COMMUTATOR WIPER POSITION	CHARACTER WHEEL POSITION
1	2	4	8		
1	0	1	0	1	11
1	1	1	1	2	10
0	1	1	0	3	9
1	1	1	0	4	8
0	0	0	1	5	7
1	0	0	1	6	6
0	1	0	1	7	5
1	1	0	1	8	4
0	0	1	1	9	3
1	0	1	1	10	2
0	1	1	1	11	1
1	0	0	0	11½	—
1	1	0	0	12	12

SEE NOTE 5



REVERSE COMMUTATOR, POSITIVE TRUE OUTPUT
ASSY NO. 10521021

BCD OUTPUT POS TRUE				REVERSE COMMUTATOR WIPER POSITION	CHARACTER WHEEL POSITION
1	2	4	8		
0	1	0	1	1	11
0	0	0	0	2	10
1	0	0	1	3	9
0	0	0	1	4	8
1	1	1	0	5	7
0	1	1	0	6	6
1	0	1	0	7	5
0	0	1	0	8	4
1	1	0	0	9	3
0	1	0	0	10	2
1	0	0	0	11	1
0	1	1	1	11½	—
0	0	1	1	12	12

SEE NOTE 4

NO.	DATE	REVISION RECORD

WIRE RUN LIST

FROM	TO	WIRE COLOR	FUNCTION	
P15-1	P2-K	BLK	BCD-2	
-2	-L	BRN	BCD-4	COL 9
-3	-M	RED	BCD-8	
-4	-N	ORN	OP	
-5	-P	YEL	BCD-1	
-6	-R	GRN	BCD-2	
-7	-S	BLU	BCD-4	COL 8
-8	-T	VIO	BCD-8	
-9	-U	GRY	OP	
-10	-V	WHT	BCD-1	
-11	-W	YEL/BLK	BCD-2	
-12	-X	WHT/BRN	BCD-4	COL 7
-13	-Y	WHT/RED	BCD-8	
-14	-Z	WHT/ORN	OP	
-15	-9	WHT/YEL	BCD-2	
-16	-10	WHT/GRN	BCD-4	COL 12
-17	-11	WHT/BLU	BCD-8	
-18	-12	WHT/VIO	OP	
-19	-13	WHT/GRY	BCD-1	
-20	-14	BLK	BCD-2	
-21	-15	BRN	BCD-4	COL 11
-22	-16	RED	BCD-8	
-23	-17	ORN	OP	
-24	-18	YEL	BCD-1	
-25	-19	GRN	BCD-2	COL 10
-26	P2-20	BLU	BCD-4	
-27	P1-1	WHT	MUL. PAR. ADV	
-28	-3	GRY	PRINT ENABLE	
-29	-4	VIO	PRINT COMM.	
-30	-5	BLU	PRINT INHIB	
-31	-6	GRN	+5 VOLTS	
-32	-7	YEL	DATA HOLD(STD)	
-33	-8	ORN	BCD-1	COL 3
P15-34	P1-9	RED	BCD-2	

FROM	TO	WIRE COLOR	FUNCTION	
P15-35	P1-10	BRN	BCD-4	
-36	-11	BLK	BCD-8	COL 3
-37	-12	WHT/GRY	OP	
-38	-13	WHT/VIO	BCD-1	
-39	-14	WHT/BLU	BCD-2	
-40	-15	WHT/GRN	BCD-4	COL 2
-41	-16	WHT/YEL	BCD-8	
-42	-17	WHT/ORN	OP	
-43	-18	WHT/RED	BCD-1	
-44	-19	WHT/BRN	BCD-2	
-45	-20	YEL/BLK	BCD-4	COL 1
-46	P1-21	WHT	BCD-8	
-52	P2-21	GRY	BCD-8	
-53	P2-22	VIO	OP	COL 10
-54	P1-A,B,C	YEL/BLK	COMMON	
-55	P2-J	WHT/BRN	BCD-1	COL 9
-56	P2-8	WHT/RED	BCD-1	COL 12
-64	P1-J	WHT/VIO	BCD-1	
-65	-K	WHT/GRY	BCD-2	
-66	-L	BLK	BCD-4	COL 6
-67	-M	BRN	BCD-8	
-68	-N	RED	OP	
-69	-P	ORN	BCD-1	
-70	-R	YEL	BCD-2	
-71	-S	GRN	BCD-4	COL 5
-72	-T	BLU	BCD-8	
-73	-U	VIO	OP	
-74	-V	GRY	BCD-1	
-75	-W	WHT	BCD-2	
-76	-X	YEL/BLK	BCD-4	COL 4
-77	-Y	WHT/BRN	BCD-8	
-78	-Z	WHT/RED	OP	
-79	-22	WHT/ORN	OP	COL 1
-57	-D	WHT/YEL	TKT LATCH-COMM	
-58	-E	WHT/GRN	TKT LATCH-N/O	
-59	-F	WHT/BLU	TKT LATCH-N/C	
P15-60	P1-H	WHT/VIO	POS. TRUE DATA HOLD	

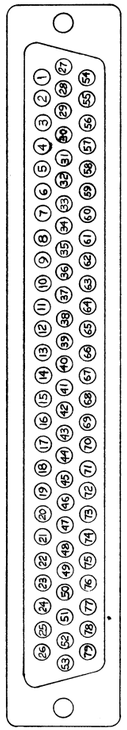
P2

A	1
B	2
C	3
D	4
E	5
F	6
H	7
J	8
K	9
L	10
M	11
N	12
P	13
R	14
S	15
T	16
U	17
V	18
W	19
X	20
Y	21
Z	22

SEE NOTE 4

SAC CONN.
SAC 22D/1-NE (MFE #40091001)

P15



CANNON CONN.
#2DC-79P (MFE #40268005)

P1

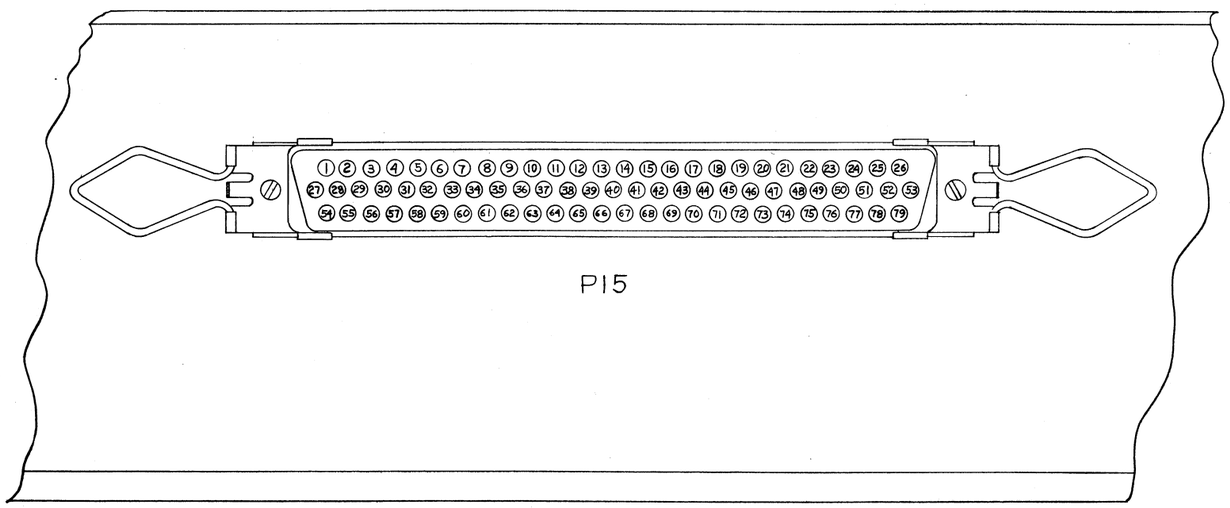
A	1
B	2
C	3
D	4
E	5
F	6
H	7
J	8
K	9
L	10
M	11
N	12
P	13
R	14
S	15
T	16
U	17
V	18
W	19
X	20
Y	21
Z	22

SEE NOTE 5

SAE CONN.
SAC 22D/1-NE (MFE #40091001)

WIRING VIEW

NOTES:
1. ALL WIRE LEADS SHALL BE 6.50 INCHES LONG.
2. ALL LEADS SHALL HAVE HEAT SHRINK TUBING NO. 50144096AT J1 AND J2.
3. ALL WIRES SHALL BE #22.
4. POLARIZING KEY SHALL BE LOCATED BETWEEN PIN NO. 14 AND 15 ON J2.
5. POLARIZING KEY SHALL BE LOCATED BETWEEN PIN NO. 4 AND 5 ON J1.
6. OP - DESIGNATE OVERPRINT.



P15

REAR VIEW OF CASE

PART Nº 10549012

NO	DATE	REVISION RECORD
D		
C	4-11-73	EWR 2826 HJR ECO UPDATE
B	2-7-73	EWR 2508 HJR P15 WAS P1
A	1-29-73	EWR 2518 HJR UPDATE

SCALE NTS | DATE 11-20-72
TOLERANCE UNLESS NOTED
FRACT. ± 1/64
DEC. .XX ± .010
DEC. .XXX ± .005
ANG. ± 2°
MATERIAL
TREATMENT
DRAWN HJR
CHECKED EC
APPROVED

QTY	ITEM	DWG. NO.	M. L. NO.	REMARKS

TITLE INTERNAL HARNESS, INST. CASE DPA12EA, DPC11EA

SHT 2

MECHANICS FOR ELECTRONICS, INC.
340 FORDHAM RD., WILMINGTON, MASS. 01887

SIZE D | DRAWING NUMBER 10549004 | REV. C

EWR 2217

7/1/73

MFE

KEEWAYDIN DRIVE, SALEM, NEW HAMPSHIRE 03079
TEL. 603-893-1921 / TWX 710-366-1887 / TELEX 94-7477

MFE SPARE PARTS FOR DIGITAL TAPE PRINTERS MODELS DPA6 AND DPA12 FOR UNATTENDED REMOTE OPERATION

Recommended Stocking Quantity	*Description*	*Part Number*
1 (117V)	Solenoid, 117V drum advance	10507002
1 (220V)	Solenoid, 220V drum advance	10507010
1 (117V)	Solenoid, 117V paper advance	10508000
1 (220V)	Solenoid, 220V paper advance	10508018
1	Switch, bank	40089005
1	Cord, 3 conductor power	40239006
4	Transformer, pulse	20112009
1 (117V)	Transformer, 117V power	10504009
1 (220V)	Transformer, 220V power	10504009
2	Connector, dual 22-pin	40091001
4	Bearing, ball	30464028
1	Assembly, DP contact block	10520005
10 (117V)	*Print solenoid assembly 117V	10500007
10 (220V)	*Print solenoid assembly 220V	10500015
2	Integrated circuit, sig. SP337A	20087003
3	Integrated circuit, sig. SP 380A	20088001
3	Integrated circuit, sig. SP 387A	20089009
3	Integrated circuit, sig. SP 321A	20113007
2	Integrated circuit, sig. SP 370A	20114005
3	Integrated circuit, sig. N8242A	20115002
4 (117V)	Rectifier, SCR ECC C106D2	20120028
4 (220V)	Rectifier, SCR ECC C106D2	20120036
20	Pin, connector male	50179001
10	Pin, connector female	50180009
1	Commutator board assembly for DPA6M and DPA12M mechanisms. 14 pin decimal type output 12" color-coded flying leads	10523009

MFE SPARE PARTS FOR DIGITAL TAPE PRINTERS
MODELS DPA6 AND DPA12
FOR UNATTENDED REMOTE OPERATION

1	Commutator board assembly with 1248 BCD positive true logic output for DPA6E and DPA12E tape printers 12" color-coded leads and molex connector (now color-coded red)	10521003
1	Commutator board assembly same as above except 1248 BCD negative true logic output (now color-coded white)	10522001
1	Commutator board assembly same as above except reverse coded 1248 BCD negative true logic output (now color-coded white)	10521307
1	Commutator board assembly same as above except reverse coded 1248 BCD positive true logic output (now color-coded red)	10521021
1	Print drum, fully assembled with customer specified wheels and shaft size (DPA6 or DPA12). Any number or combination of wheels.	To be Assigned
1	Print bar assembly with customer specified frame (DPA6 or DPA12) and exact location and number of active columns. 12" wires and molex connector(s) included	To be Assigned
	Specify for each print solenoid assembly required (117VAC)	10500007
	(220VAC)	10500015

* It is recommended that customer stock and replace the complete print bar assembly for a given drum configuration. The required precision alignment of print solenoid assemblies and application of Loc-Tite for mounting is best done at the factory.

Strip Chart Recorders

Digital Printers

X-Y Recorders

Digital Cassette Tape Transports

MFE

1973

Miniature Recorders

Torque Motors

Angular Transducers

Galvanometers

Teletype Projectors

Graphic Translators

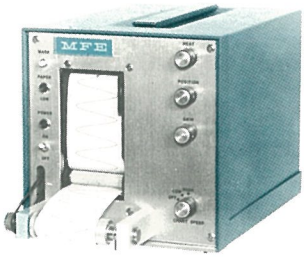
Linear Actuators

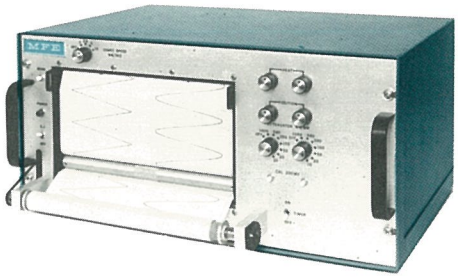
MFE CORPORATION

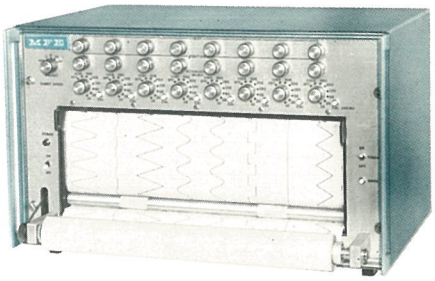
Keewaydin Drive, Salem, New Hampshire 03079
TEL. 603-893-1921
TWX 710-366-1887 TELEX 94-7477

STRIP CHART RECORDERS

PORTABLE / RACK MOUNT RECORDING SYSTEMS



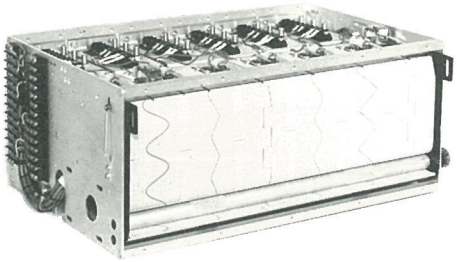


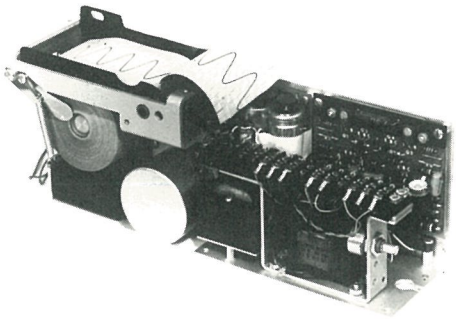


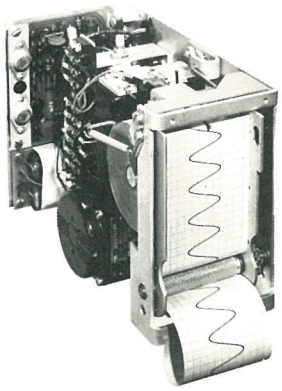
MFE portable or rack mount single and multichannel recording systems are completely self-contained lightweight instruments. Features include • inkless heated stylus writing • solid state design • 40 HZ full scale bandwidth • wide channels • dc to 100 Hz (-3db) 10 mm pp • 7 step attenuators • multiple chart speeds. • 10 mv/mm sensitivity or optional 1 mv/mm

MODEL	NO. CHANNELS	CHANNEL WIDTH	PANEL HEIGHT	WT.
M-21CAHA	1	50 MM.	8¾"	15 lbs.
M-51	1	100 MM.	8¾"	20 lbs.
M-22CAHA	2	50 MM.	8¾"	22 lbs.
M-52	2	100 MM.	10½"	40 lbs.
M-23CAHA	3	50 MM.	8¾"	39 lbs.
M-53	3	100 MM.	10½"	48 lbs.
M-24CAHA	4	50 MM.	8¾"	45 lbs.
M-26DAHA	6	50 MM.	10½"	57 lbs.
M-28D	8	40 MM.	10½"	64 lbs.
OPTION 01	1 mv/mm, add $100/channel.			

OEM RECORDER MODULES





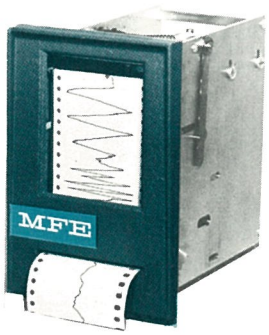


MFE single through 8 channel thermal writing recorder modules are designed for maximum flexibility. The basic transport is equipped with the MFE moving iron pen motor(s), chart drive motor(s), stylus heat power supply and control potentiometer, for each channel and front loading paper supply and drive mechanism. To the basic module are added MFE plug-in solid state drive amplifiers, power supplies and accessory equipment: event marker(s), paper take-up, front panel, and portable case.

Request detail data sheets and prices on all models and options

M 12 SERIES

MINI-STRIP CHART RECORDER



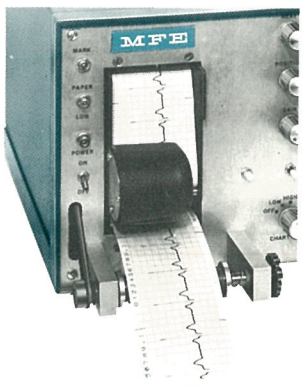
- Continuous Rectilinear Trace
- Inkless Thermal Recording
- Completely Self-contained with Electronics and Pen Heat
- Chart Paper Capacity of 100 feet
- Quiet Operation
- Simple Paper Loading from Front Panel
- Portable or Rack Mounting
- Lightweight – 4.5 pounds
- Wide Range of Speeds
- Low Power Consumption
- Solid State
- 2 Inch Wide Chart

Optional Configurations

- Line Voltage Monitor
- Line Frequency Monitor

ADP SERIES

OEM DIGITAL PRINTER ACCESSORY

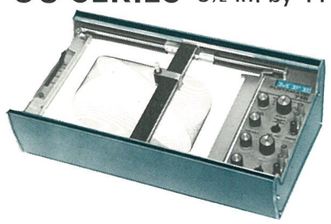


Simultaneous Digital Printing and Analog Recording. Chart speeds up to 50 mm/sec. Print Rate 5 Characters/sec.

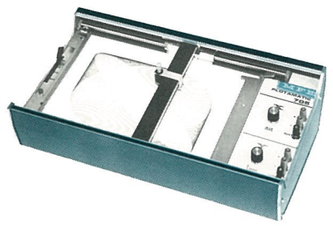
X-Y PLOTAMATIC RECORDERS

high performance at LOW COST

700 SERIES 8½ in. by 11 in. (DIN A4)



715 GENERAL PURPOSE



705 DEDICATED OEM

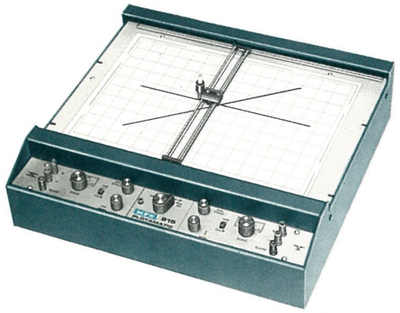
700 Series Recorders with Pad/Load®

The 700 Series recorders, while low in cost, still meet or exceed the performance specifications of many higher priced recorders. The new "PAD/LOAD®" paper handling system, operates three times faster than those available on conventional single sheet machines. A 50-sheet pad of paper is loaded into the recorder, and as each page is consumed, the operator simply tears off the used sheet, exposing a new sheet.

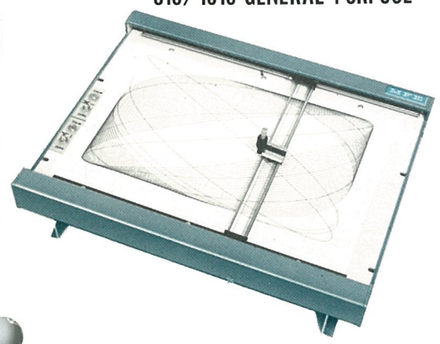
All 700 Series PLOTAMATICS have • I/C circuitry • no mechanical or photo choppers • clean fibre-tip pens • electronic over-drive protection • operate from 50-400 Hz power • buffered feedback potentiometers for noise immunity • ± 0.2% F.S. accuracy • differential guarded inputs with 140 dB CMR • constant 1 meg input impedance • no servo gain adjustments.

MODEL NO. English	MODEL NO. Metric	APPLICATION	RANGE	SLEWING SPEED
705		dedicated - OEM	1 range: 100 mV/in	17 in/sec
	705M	dedicated - OEM	1 range: 40 mV/cm	43 cm/sec
715		general purpose	5 ranges: 1 mV/in to 10 V/in	17 in/sec
	715M	general purpose	5 ranges: 0.5 mV/cm to 5.0 V/cm	43 cm/sec
7T		plug-in time base generator (use with 700, 800 or 1000 series)	0.5, 1, 2, 5, 10, 20, 50 sec/in and 0.25, 0.5, 1, 2.5, 5, 10, 25 sec/cm	

800/1000 SERIES 11 in. by 17 in. (DIN A3)



815/1015 GENERAL PURPOSE



810/1010 OEM REMOTE CONTROL

800/1000 Series Recorders with PAD/LOAD® Option

800/1000 Series recorders meet or exceed the performance specifications of many higher-priced units.

All 800/1000 Series PLOTAMATICS have • I/C circuitry • no mechanical or photo choppers • fibre-tip or optional capillary pens • electronic overdrive protection • differential-pressure paper hold-down • buffered feedback potentiometers for noise immunity • ± 0.2% F.S. accuracy • differential, guarded inputs with 140 dB CMR • constant 1 meg input impedance • no servo gain adjustments • holds either 8½ in. x 11 in. or 11 in. x 17 in. paper.

MODEL NO. English	MODEL NO. Metric	APPLICATION	INPUT RANGES	SLEWING SPEED
805		dedicated - OEM	1 range: 100 mV/in	30 in/sec
	805M	dedicated - OEM	1 range: 40 mV/cm	76 cm/sec
810		remote control - OEM	1 range: 1 mV/in	30 in/sec
	810M	remote control - OEM	1 range: 0.5 mV/cm	76 cm/sec
815		general purpose	5 ranges: 1 mV/in to 10 V/in	30 in/sec
	815M	general purpose	5 ranges: 0.5 mV/cm to 5.0 V/cm	76 cm/sec
1005		dedicated - OEM - high speed	1 range: 100 mV/in	50 in/sec
	1005M	dedicated - OEM - high speed	1 range: 40 Mv/in	127 cm/sec
1010		remote control - OEM - high speed	1 range: 1 mV/in	50 in/sec
	1010M	remote control - OEM - high speed	1 range: 0.5 mV/cm	127 cm/sec
1015		general purpose - high speed	5 ranges: 1 mV/in to 10 V/in	50 in/sec
	1015M	general purpose - high speed	5 ranges: 0.5 mV/cm to 5.0 V/cm	127 cm/sec

DIGITAL TICKET PRINTER

MODEL DPC11A

- Printout on Multiple Copy Ticket of TAB Card Size
- Indexing of 20 consecutive lines
- Parallel Entry BCD Input
- Floating Decimal Option in up to 11 Columns
- Column Suppression

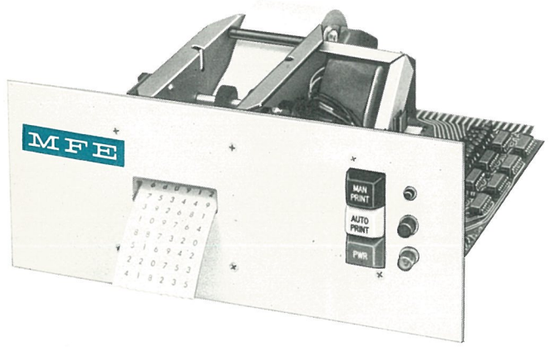
MODEL DPC11MA
Printing mechanism

MODEL DPC11EA
Printing mechanism with interface electronics

• OEM • RACK • PORTABLE

DIGITAL TAPE PRINTER

MODELS DPA12A and DPA6A



- Parallel ENTRY BCD INPUT
- 6 or 12 COLUMN MODELS
- FLOATING DECIMAL POINT
- COLUMN SUPPRESSION

MODELS DPA12MA and DPA6MA
Printing mechanism

MODELS DPA12EA and DPA6EA
Printing mechanism with interface electronics
Model DPA6EA
Model DPA12EA

• OEM • RACK • PORTABLE

SPECIFICATIONS

Numerical Data Input: 1 - 2 - 4 - 8 BCD Parallel entry.

Logic Levels: Positive true logic standard. "1" state > 2.4 and < 5.5 volts, source Z less than 40 K Ω. "0" state < 0.8 volts, source Z less than 200Ω.

Print Command: Change from logic "0" state to logic "1" state (STD.). 10 microsecond minimum duration capacity coupled. 100 nanoseconds minimum direct, coupled.

Print Rate: 400 milliseconds per line at maximum rate.

Temperature Range and Duty Cycle: Continuous duty 100% at 0°C to + 50°C for one line per second print rate. Intermittent duty 25% 150 consecutive lines maximum at +20°C for 2.5 lines per second maximum print rate.

Data Hold Signal: Changes from "1" state to "0" state (STD.) upon receipt of print command. Automatic return to "1" state upon completion of print cycle. Printer output Z less than 1000Ω for logic 1, less than 200Ω for logic 0 with 5 ma. maximum current.

Column Suppression: Positive true model—all inputs high; negative true model—ground all four inputs.

Overprinting: 12 lines of overprinting on Model DPA12EA and Model DPC11EA, and eight lines on Model DPA6EA. Change from logic "1" state to logic "0" state (STD.) Available for wheel positions 11 and 12 only.

Characters: .110 high by .100 wide, .010 face.

Extra Paper Advance (Models DPA6A and DPA12A): Advances paper tape one line per print command while 0 volts or switch closure applied to print inhibit terminal at rear of printer (useful to space groups of data).

Extra Ticket Advance (Model DPC11A): Advances ticket one line per print command while 0 volts or switch closure applied to print inhibit terminal at rear of printer (useful to space groups of data).

Fast Paper Advance: Grounding of appropriate rear terminal causes paper to advance at 30 lines per second rate. Front panel push-button switch supplied with Option F.

Fast Ticket Advance (Model DPC11A): Grounding of appropriate rear terminal causes ticket to advance at 30 lines per second rate. Front panel push-button switch supplied with Option F.

Columns and Line Spacing: DPA6A 1 to 6 columns, DPA12A 1 to 12 columns, DPC11A 1 to 11 columns. .275 inches between column centers, five lines per inch.

Paper Tape (Model DPA6A and DPA12A): DPA6A 1-22/32" wide, DPA 12A 8-3/8" wide. Pressure-sensitive paper 150 foot length with approximately 9,000 prints per roll.

Ticket (Model DPC11A): 3-1/4" x 7-7/8:: TAB size; TAB card plus 2 copies; 5 lines per inch.

Weight: DPA6A 3.75 lbs, DPA12A and DPC11A 4.50 lbs. (half rack mount with Option F), instrument case 5 lbs.

Power: 117 volts ±10%, 60 Hz or 230 Volts ±10%, 50 Hz optional. 10 watts quiescent, 70 watts during print cycle with 10 active columns.

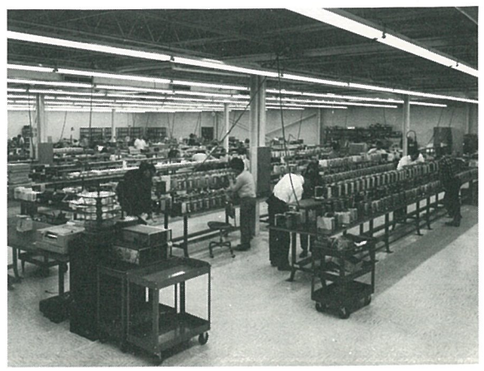
All prices F.O.B. Salem, New Hampshire U.S.A.
OEM Discounts available
Request detail data sheets and prices on all options

MFE Manufacturing

Digital Ticket and Tape Printer Final Assembly and Test Area. Mechanical inspection and complete electrical test await these digital printers prior to shipment.

X-Y Recorder Assembly Area. 800 and 1000 Series (11" x 17" models) production line in foreground and 700 Series (8½" x 11" models) production line in the background.

Single and Multi-Channel Portable and Rack Mount Recording Systems Final Assembly Area. Upon completion of final assembly, recorders will undergo production test and final Quality Assurance inspection prior to shipment.



Analog OEM Recorder Module Assembly Area. Sub-assemblies are brought together here for final assembly to specific customer requirements, production test, and Quality Assurance inspection.

Meet MFE corporation

MFE Corporation (formerly Mechanics for Electronics, Inc.) was founded in January 1962 to market inventions in the field of electromagnetic devices. The company was co-founded by Richard M. Allen, now MFE's President. A laboratory was set up in the corner of a borrowed office in Boston's Park Square Building. By spring of the first year the business was relocated to a loft in Cambridge.

Initial production of pen motors started at the end of 1962. The motors were offered to various recorder manufacturers whose products were sold in the laboratory market. In the spring of 1965, two new products were introduced, one a circuit-breaker actuator and the other a direct-writing analog recorder module for the medical original equipment market (OEM). Multi-channel units in various configurations were added. Today MFE is the world's leading producer of OEM recorder modules, used in medical systems.

After two moves to larger facilities within Cambridge, MFE moved to a newly-constructed plant in Wilmington, Massachusetts in November, 1969. Employment reached 100 by early 1970. By the late spring of 1971 it again became apparent that even larger quarters would be required and a new plant site was bought in Salem, New Hampshire where a 30,000 square foot building was constructed. Operations have been located there since July, 1972.

New products are being added continually. Within the last year MFE introduced a slow-speed, compact analog recorder for monitoring of pressure, temperature, flow and other slowly varying parameters associated with both the medical field and the process industry, including the control of pollution. From its own special products section, MFE has generated a complete line of one, two, three, four, six and eight channel portable and rack mount recorders including various wide chart recorders for the laboratory and industrial user markets. Other new products are being developed in the areas of graphic recording and digital printing.

There are 40 domestic and 41 foreign sales offices from which information on MFE products can be obtained. Most foreign and many domestic representatives offer on the spot service of MFE products. Where local service is not feasible, MFE's factory service program and liberal warranty policy come to the aid of customers.

In addition to Mr. Allen, the management team consists of Myron Kasok, Vice President Marketing; Thomas L. Myette, Vice President Manufacturing; and David N. Keast, Vice President Development.